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Notes on and Descriptions of South American Nacophorini (Lepidoptera, Geometridae)

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ABSTRACT

The Nacophorini from the Andes of South America are briefly reviewed and a new key to the genera, based on male genitalia, is given. The genus *Dentinalia* Heimlich is redefined, and five species from Argentina are described as new; the moth described as *Salpis unica* Rindge, from Chile, is transferred to the present genus and the male is described. Keys to the seven species of *Dentinalia* are presented. Seven species are described as new in *Salpis* Mabille; six are from Argentina and one is from Bolivia. Another species is transferred to *Salpis* and redescribed; it is from Ecuador and Venezuela, by far the most northern distribution record for a member of this genus. Because five of the new species of *Salpis* are placed in group III, a revised key to the male genitalia of that group is given. All the species and their genitalia are illustrated.

INTRODUCTION

My revision (1971) of the Nacophorini from the Andean region of southern South America included 43 species in seven genera, with all the species being from Chile and Argentina and one exception from Bolivia. This geographical limitation excluded the genus *Dasystole* Warren, as well as two closely allied but unplaced species (Poole, 1969, p. 276). In the present paper I place these two species in my group III of the genus *Salpis* Mabille, and describe them. *Dasystole* is also included in a new key to the genera of the Andean Nacophorini. This tribe is now known to extend in

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the Andes from western Venezuela to Tierra del Fuego in southern Argentina.

Recently Ing. Sergio Schajovskoy, of San Martín de los Andes, Neuquén, Argentina, sent me a number of undescribed species of Nacophorini from southern Argentina. Eleven of these are described as new in this paper; five are placed in *Dentinalia* Heimlich, and six in *Salpis*. The addition of these species to *Dentinalia*, in addition to placing *unica* Rindge therein, has necessitated a revised description of this heretofore monotypic genus. Keys are given for the species now placed in *Dentinalia*.

As I mentioned in the section on Phylogeny in the Introduction of my revision (Rindge, 1971), the various morphological characters of this group of moths seem to form a mosaic, with no really clear-cut pattern of primitive or advanced forms. Some of the species described in the present paper possess characters that were thought to be absent when I defined the genera, further complicating the problem of recognizing these groups. Based on our present knowledge I believe the only safe way to recognize the genera is by means of the male genitalia.

KEY TO GENERA BASED ON MALE GENITALIA

1. Uncus trifid *Catocalopsis*
Uncus simple 2
- 2(1). Paired processes of anellus rudimentary or absent *Dentinalia*
Paired processes of anellus strongly developed 3
- 3(2). Anellus with paired processes very large, enlarged medially, and with surface thickly covered with fine setae; aedeagus with exerted vesica very large, roughly T-shaped *Talca*
Anellus not as above, without setae; vesica a simple tube 4
- 4(3). Gnathos with anteroventral one-half setose *Malleco*
Gnathos not as above 5
- 5(4). Uncus with numerous setae on dorsal surface *Catophoenissa*
Uncus without dorsal setae 6
- 6(5). Gnathos quadrate or extending ventrally as two sclerotized arms *Praeantarctia*
Gnathos V-shaped 7
- 7(6). Valve with process near apex, costa having some sort of flap or protuberance *Dasystole*
Valve with simple costa *Salpis*

The holotypes and allotypes (when present) of all species described in this paper are deposited in the collection of the American Museum of Natural History. Paratypes of the Argentinian species are in the collections of the American Museum of Natural History and of Schajovskoy.

All the photographs have been taken by the author from material in the collection of the American Museum of Natural History.

ACKNOWLEDGMENTS

I am grateful to Ing. Schajovskoy for discontinuing his work on this group of moths when he heard I was doing my revision, and I thank him for his most generous aid and cooperation, and for permission to place the primary types of the new species described in the present paper in the collection of the American Museum of Natural History. I also thank Dr. D. C. Ferguson of the Systematic Entomology Laboratory, United States Department of Agriculture, the National Museum of Natural History, Smithsonian Institution for assistance with the one species from that collection included herein.

GENUS *DENTINALIA* HEIMLICH

Dentinalia HEIMLICH, 1960, p. 268. RINDGE, 1971, p. 312.

Heretofore *forsteri* Heimlich has been the only included species in the genus. I now describe two species from Argentina that agree very well with the Chilean species; the easiest way to separate them is by the gray hind wings in *forsteri*, whereas the Argentinian specimens have orange hind wings. The males of these three species have genitalia with a tremendously developed gnathos, rudimentary lateral processes of the anellus, and each valve with a large, dentate, curved costal protuberance. Another species is described that looks quite different from the above, but the male genitalia have a large costal swelling. These four constitute group I of *Dentinalia*.

In addition to the species mentioned above, three others are before me that apparently should be placed in *Dentinalia* on the basis of their male genitalia. They agree with *forsteri* in the development of the gnathos and the reduction of the lateral processes; each valve has a simple costa, however. These will constitute group II. Included are a pair of closely allied species, one of which was described as *Salpis unica* Rindge (named from a unique female), a closely related species from Argentina, and a large orange-brown species that is not apparently closely related to the preceding pair.

The inclusion of seven species in *Dentinalia* necessitates some additions and changes in the description of the genus. They include antennae of male pectinate or simple; front flat or swollen; palpi with third segment varying in length from one-third of, to length of, eye; thorax with either mixture of spatulate and hairlike scales or with hairlike scales only; thoracic tufts present or absent; hind tibia of male with or without hair pencil. Upper surface of forewings varying from dark gray to dark brown, having

irregular cross lines, hind wings paler, gray or orange, to forewings orange-brown and hind wings white, both with very reduced maculation. Under surface with discal dot large and prominent on hind wings. Male genitalia with gnathos either very elongate and tapering to point, or very long, truncate and spinose apically; valves simple, or with large costal swelling; anellus either moderate, with small posterior median projection, or with structure extremely long and slender, narrowed apically; aedeagus either short and relatively wide, or elongate and slender; vesica with from one to many spines. Female genitalia with corpus bursae short to elongate; signum present or absent.

Because of the increased number and variability of characters for the adults, *Dentinalia* is best recognized by the male genitalia.

KEY TO SPECIES BASED ON COLOR AND STRUCTURES

1. Males with pectinate antennae 2
 Males with simple antennae 5
- 2(1). Forewings with upper surface orange-brown *schajovskoyi*
 Forewings with upper surface dark brown or grayish brown 3
- 3(2). Hind wings with upper surface gray *forsteri*
 Hind wings with upper surface orange with dark border 4
- 4(3). Hind wings with upper surface bright orange, with sharply defined black
 border *latifascia*
 Hind wings with upper surface dull orange-brown, with brownish black
 border distad of complete extradiscal line *diversa*
- 5(1). Males with hair pencil on hind tibia; maculation of upper surface of fore-
 wings usually clearly represented 6
 Males without hair pencil on hind tibia; maculation of upper surface of
 forewings obsolescent or absent *truncata*
- 6(5). Forewings of both sexes with upper surface tending to be rather unicolorous
 brown; Chile *unica*
 Forewings with upper surface tending to be variable in color, with females
 grayer than males; Argentina *variata*

BASED ON MALE GENITALIA

1. Each valve with large costal swelling (Group I) 2
 Each valve simple, without costal swelling (Group II) 5
- 2(1). Gnathos with median projection very long and attenuate 3
 Gnathos with median projection truncate and spinulate apically... *truncata*
- 3(2). Each valve with costal swelling very slender, of same width for its length
 *latifascia*
 Each valve with costal swelling very broad basally, tapering and curved
 apically 4
- 4(3). Uncus with apex laterally compressed; aedeagus 1.4 mm. in length
 *diversa*
 Uncus with apex round; aedeagus 1.7 mm. in length *forsteri*

- 5(1). Anellus broad, terminally bifurcate *schajovskoyi*
 Anellus slender, very long, pointed apically 6
 6(5). Each valve with costa produced near apex, with small concave area before
 apex *unica*
 Each valve with costa gently swollen apically and rounded into apex
 *variata*

BASED ON FEMALE GENITALIA¹

1. Signum present 2
 Signum absent 4
 2(1). Ostium bursae large, 0.6 mm. wide, bowl-shaped *variata*
 Ostium bursae small, not prominent 3
 3(2). Corpus bursae short and broad, about 3.2 mm. in length *forsteri*
 Corpus bursae long and slender, about 4.3 mm. in length *schajovskoyi*
 4(1). Ductus bursae 0.7 mm. in length *unica*
 Ductus bursae 0.5 mm. in length *variata*

GROUP I

Dentinalia diversa, NEW SPECIES

Figures 1, 7

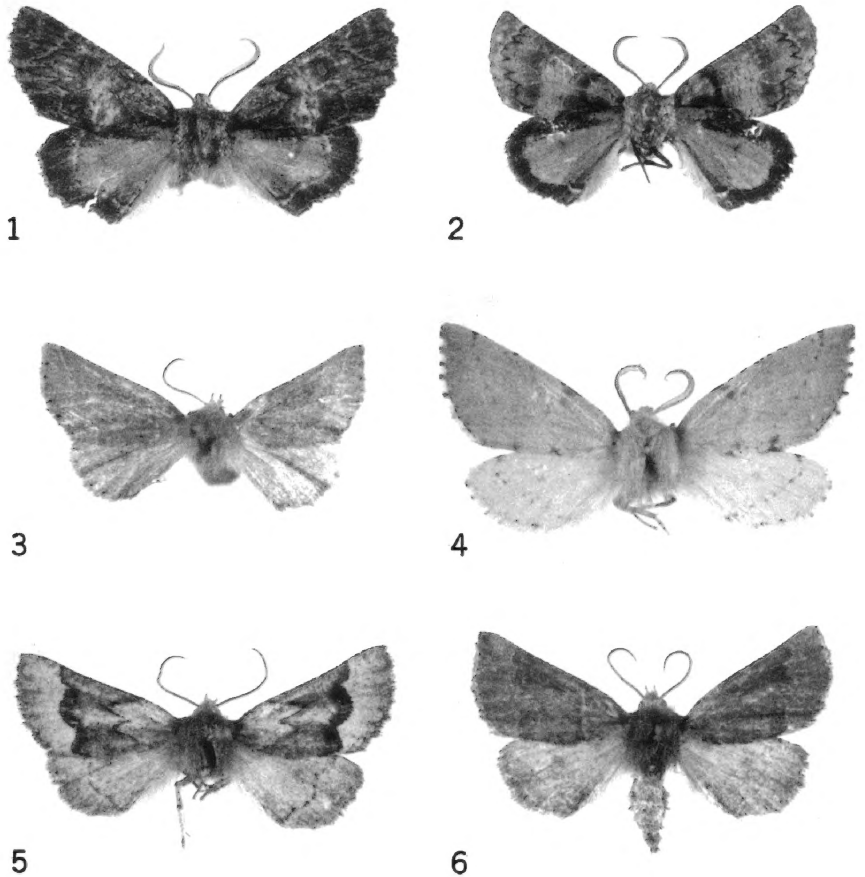
DIAGNOSIS: This species has the same basic pattern as does *forsteri* but is easily separated from that species by the orange-brown hind wings. The male genitalia of the two are similar; those of the present species can be recognized by the laterally flattened uncus.

MALE: Head with vertex having elongate, flattened pale grayish brown and dark gray scales; front flat, pale gray; palpi with third segment one-half length of eye, basal segments having long gray and blackish brown scales; antennae with longest pectinations 0.6 mm. in length. Thorax above with terminally spatulate, pale grayish brown scales in patagia, anterior and posterior tufts, with collar of flattened and hairlike brown scales, remainder of thorax with dark gray hairlike scales; below brown anteriorly, becoming grayish brown posteriorly; legs gray to grayish brown, with dark brown scales. Abdomen pale grayish brown, with scattered dark brown scales above.

WINGS: Forewings rather short and broad, with pointed apex; outer margin of all wings weakly crenulate.

UPPER SURFACE OF WINGS: Forewings dark brown or dark grayish brown, with dark gray scaling, median area with variable amount of white (holotype) or gray (paratype) scaling; cross lines black, pattern as in *forsteri*; terminal line represented by diffuse intravenular dots, separated

¹The females of *diversa* and *latifascia* are unknown.



FIGS. 1-6. Adults of *Dentinaia*. 1. *D. diversa*, new species, holotype male. 2. *D. latifascia*, new species, holotype male. 3. *D. truncata*, new species, holotype male. 4. *D. schajovskoyi*, new species, holotype male. 5, 6. *D. variata*, new species. 5. Holotype male. 6. Paratype male. All figures $\times 1.3$.

by pale brown veins; fringe concolorous with wing. Hind wings dull orange-brown, with wide brownish black border distad of complete, narrow extradiscal line; discal spot small, diffuse; terminal line apparently absent; fringe paler than border.

UNDER SURFACE OF WINGS: Forewings mostly dark brown or dark grayish brown, with posterior portion of wing dull orange; hind wings with even mixture of gray, dark gray, and dark grayish brown scales; discal

dots present on all wings, elongate on forewings, round on hind wings; outer cross lines weakly represented or obsolescent on all wings; terminal line absent; fringe concolorous with forewings, paler than hind wings.

LENGTH OF FOREWING: 15.5 (holotype) to 16.0 (paratype) mm.

FEMALE: Unknown.

MALE GENITALIA: Similar to those of *forsteri*, differing mainly as follows: slightly smaller; uncus shorter, ventrodistal margins straighter, apical portion laterally flattened; gnathos with apex bluntly rounded, weakly bifurcate; valve with higher costal swelling, extending 0.5 mm. above costa (compared with 0.35 mm. for *forsteri*), with shorter and less recurved apex; anellus more slender, with small lateral incision above base of valve; lateral processes more reduced than in *forsteri*, each appearing as minute swelling; aedeagus shorter, 1.4 mm. in length (compared with 1.7 mm. in *forsteri*), narrower; vesica with one thick and two or three very slender spines.

FEMALE GENITALIA: Unknown.

TYPES: Holotype, male, and paratype, male, Chubut Province, Argentina, October, 1956 (A. Gjai). The genitalia of the holotype are mounted on slide FHR 16975.

REMARKS: Two specimens and one genitalic dissection have been studied. The holotype has the upper surface of the forewings slightly browner and with a definite grayish white band in the median area; the paratype is slightly grayer and has the median area dark gray.

ETYMOLOGY: The specific name is from the Latin *diversus*, different or opposed, in reference to the colors of the upper surface of the wings.

***Dentinalia latifascia*, NEW SPECIES**

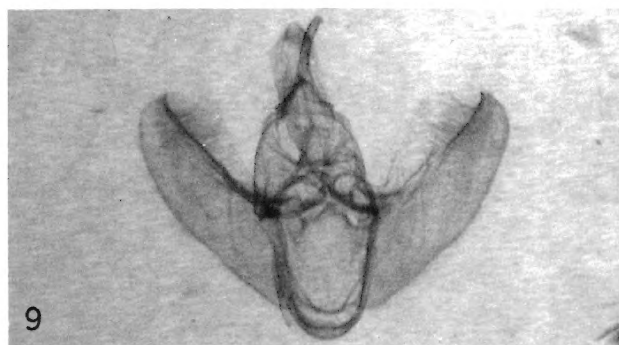
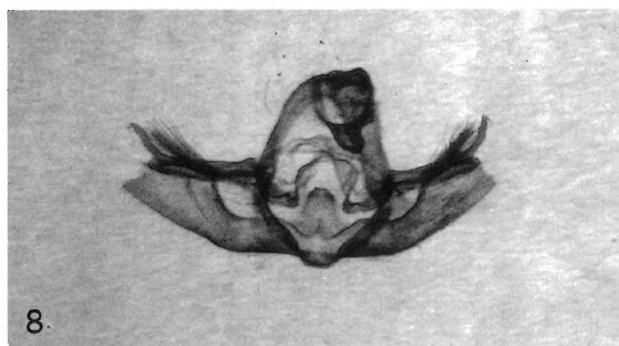
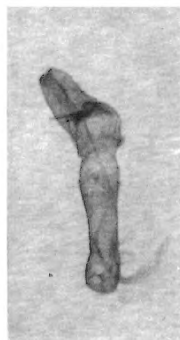
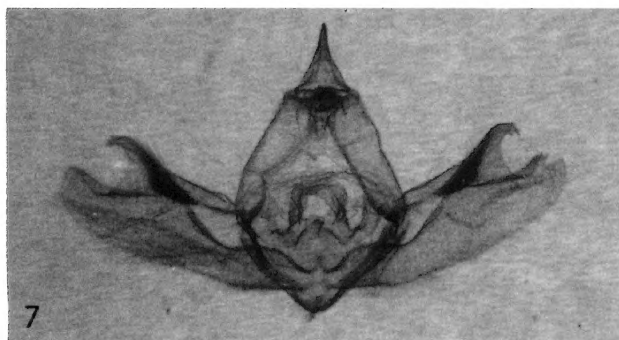
Figures 2, 8

DIAGNOSIS: This small species is distinguished by the very broad median area on the upper surface of the forewings, and by the bright orange hind wings having a sharply defined black border. The male genitalia differ from those of *diversa* by the much narrower costal swelling.

MALE: Head with vertex and front having pale gray and grayish brown flattened scales, and with some dark brown hairlike scales below antennae; front flat; palpi with third segment about two-thirds length of eye, basal segments having long gray and brown scales; antennae with longest pectinations 0.4 mm. in length. Thorax and legs similar to those of *diversa*. Abdomen with mixture of gray and grayish brown scales above and below.

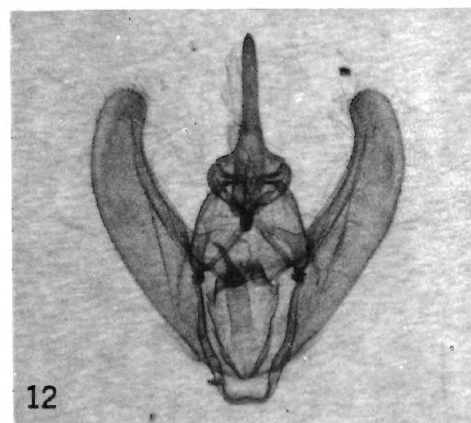
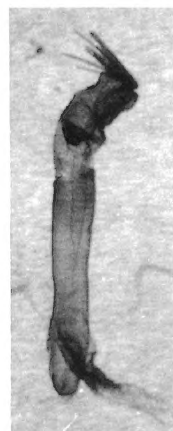
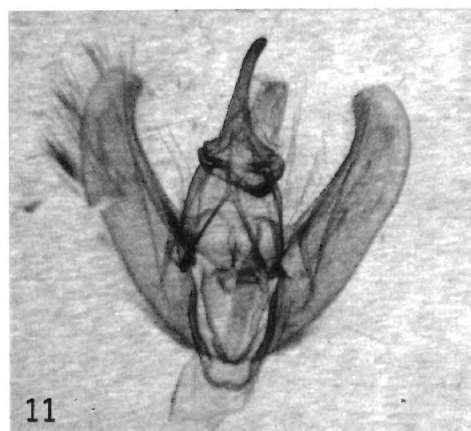
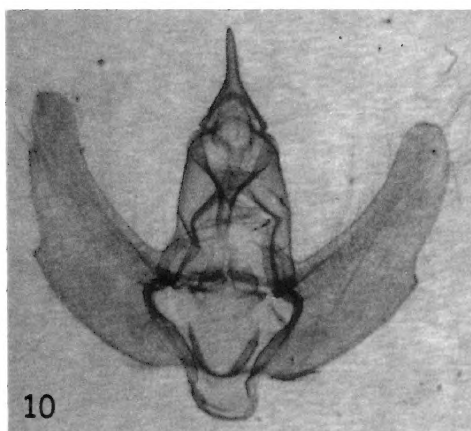
WINGS: Forewings relatively elongate, with outwardly curved outer margin; outer edge of all wings weakly crenulate.

UPPER SURFACE OF WINGS: Forewings dark grayish brown, somewhat



FIGS. 7-9. Male genitalia of *Dentinalia*. 7. *D. diversa*, new species, holotype. 8. *D. latifascia*, new species, holotype (apices of valves broken off). 9. *D. truncata*, new species, holotype.

variable, tending to have basal area and part of median area broadly gray; cross lines black, slender, widely separated; t. a. line arising on costa one-fourth of distance from base, more or less evenly curved into cubital cell,



FIGS. 10-12. Male genitalia of *Dentinalia*. 10. *D. schajovskoyi*, new species, holotype. 11. *D. unica* (Rindge). 12. *D. variata*, new species, paratype.

meeting black and dark brown dash from base of wing, then sharply angled outwardly, meeting inner margin one-half distance from base; discal spot represented by small, inconspicuous elongate patch of silvery gray scales on outer edge of paler median band; t. p. line arising on costa three-fourths distance from base, going outward to middle of wing, then subparalleling outer margin, with strong inwardly pointing teeth on all veins, and having incomplete, narrow white shade line distad of t. p. line; s. t. line absent except for small white tornal spot; outer portion of wing having veins brown scaled; terminal line varying from complete and narrow to obsolescent, broken by veins and having small intravenular dots; fringe concolorous with wing. Hind wings bright orange, except for broad, sharply defined, black anterior margin and outer border, and for narrower black anal margin, the last separated from outer border by narrow white band; discal dot obsolescent, when present elongate, narrow, angulate, black; extradiscal line absent except for grayish white spot on costa and narrow white band above anal angle; fringe slightly paler than black border.

UNDER SURFACE OF WINGS: Forewings with central area broadly orange, surrounded by grayish black borders, latter being widest along outer margin of wing; without maculation except for black discal dash; fringe concolorous with wing. Hind wings grayish black, with diffuse areas of orange scaling, and with some pale gray scales along anal margin; maculation absent or obsolescent with extradiscal line being weakly suggested by orange scaling; fringe concolorous with wing.

LENGTH OF FOREWING: 14 to 15 mm.; holotype, 14 mm.

FEMALE: Unknown.

MALE GENITALIA: Similar to those of *forsteri*, differing mainly as follows: smaller; uncus with narrower apical section; valve with ridge along costa of same width throughout, then angled distally, becoming narrowed, apex with two or three spinelike processes; anellus broadest anteriorly, with strong median incision, median portion gently tapering, posterior end narrowed, bifurcate; lateral processes replaced by elongate, lateral, sclerotized area on each side of anellus; aedeagus shorter, 1.3 mm. in length, but of same width; vesica with one thick spine, surrounded by large group of very slender spines.

FEMALE GENITALIA: Unknown.

TYPES: Holotype, male, San Martín de los Andes, Neuquén Province, Argentina, October 27, 1958 (M. Gentili). The genitalia of the holotype are mounted on slide FHR 16973. Paratypes: same data as holotype, October 29, 1958, one male; Pucará, [Lago Lacar], Neuquén Province, Argentina, November 5, 1958 (S. Schajovskoy), one male.

REMARKS: Three specimens and one genitalic dissection have been studied. The upper surface of the forewings are somewhat variable in color and in the width of the pale band in the very broad median area.

ETYMOLOGY: The specific name is from the Latin *latus*, wide, and *fascia*, band, in reference to the very broad median area of the forewings.

***Dentinalia truncata*, NEW SPECIES**

Figures 3, 9, 13

DIAGNOSIS: This species is the only one known in group I that has an almost unicolorous brown upper surface to the forewings and unicolorous hind wings without maculation. The genitalia of both sexes are very distinctive; see the keys for details.

MALE: Head with vertex and front pale brownish gray; front flat; palpi with third segment very long and slender, slightly shorter than length of eye, dark grayish brown, basal segments long scaled, with mixed pale brownish gray and blackish brown scales; antennae simple. Thorax above pale brownish gray, long scaled; below darker anteriorly, pale brownish gray posteriorly; legs brownish gray, with some darker scaling, and with ends of tarsal segments narrowly white; hind tibia without hair pencil. Abdomen gray, with brownish scaling above.

WINGS: Forewings with pointed apex, faintly concave below apex, outer margin angulate or curved; outer margins of all wings scarcely scalloped.

UPPER SURFACE OF WINGS: Forewings unicolorous brown with some dark gray and grayish brown scaling in cell and along fold; maculation almost completely absent, represented only by very faint trace of t. p. line, arising on costa nine-tenths of distance from base, apparently biconcave and roughly parallel with outer margin, marked with single row of white scales; terminal line represented by black intravenular dots of varying sizes; fringe concolorous with wing. Hind wings unicolorous dark gray, without maculation except for discal dot showing through from under surface, and with some weakly developed terminal intravenular dots; fringe concolorous with wing.

UNDER SURFACE OF WINGS: Forewings gray with scattered darker scales, and with some scattered grayish white scaling in terminal area; hind wings slightly paler than forewings; without maculation except for large, black discal spot on each hind wing, and intravenular dots of varying size along outer margin; fringes concolorous with wings.

LENGTH OF FOREWING: 14 mm. (holotype).

FEMALE: Similar to male; antennae simple; upper surface with forewings darker brown and hind wings darker gray; maculation as in male but

t. p. line represented by black scaling, straighter in course. Under surface of all wings also darker; forewings with incomplete t. p. line and trace of discal dot; hind wings with trace of extradiscal line; intravenular dots more strongly represented than in male.

LENGTH OF FOREWING: 15 mm. (allotype).

MALE GENITALIA: Uncus long and slender, curved; gnathos with broad median area, apex slightly rounded, terminally with numerous short, stout spines; valve with broadly swollen costa, in width about equal to width of valve, increasing in width distally, apically asymmetrical, bluntly rounded, without dentate enlargements, sharply narrowed before apex of valve but with small, curved, sclerotized costal point forming apex; remainder of valve simple; anellus large, 1.0 mm. in length, filling almost entire area between bases of valves, tapering distally to asymmetrical point; paired processes of anellus represented by slender, sclerotized rods extending posterolaterally toward costa; aedeagus 2.2 mm. in length, slender, straight, with sclerotized, pointed tip posteriorly; vesica extending at about 45-degree angle to aedeagus, with short row of six or so heavier spines, continued distally by more numerous, slender spines.

FEMALE GENITALIA: Sterigma with lamella antevaginalis large, membranous area covering ostium, with areas laterad thereto sclerotized, broad, extending from anterior margin of ostium posterolaterally, posteriorly converging then extending laterally; ostium bursae large, 0.6 mm. wide, rounded, bowl-like; ductus bursae small, curved ventrally in weakly U-shaped form, slightly longer on right side than on left, joining corpus bursae dorsally; ductus seminalis arising from dorsal surface at end of corpus bursae; corpus bursae membranous, large, widest medially; signum small, 0.15 mm. in length, situated dorsally, posterior margin extending into corpus bursae; apophyses posteriores 1.4 mm. in length.

TYPES: Holotype, male, Cerro Malo, elevation 1700 meters, Neuquén Province, Argentina, December 21, 1957 (S. Schajovskoy); allotype, female, Pucará, [Lago Lacar], Neuquén Province, Argentina, February 3, 1968 (S. Schajovskoy). The genitalia of the holotype are mounted on slide FHR 17023, and of the allotype on 17062.

REMARKS: Two specimens and two genitalic dissections have been studied. In general appearance the adults of this species are very different from the other members of group I; however, they could be easily mistaken for some of the more immaculate brown specimens of *variata* (described below) in group II; compare figures 3 and 6. The origin of the t. p. line of the upper surface of the forewings in the present species is nearer the apex than is that of *variata*, and the males of *truncata* do not have a hair pencil on the hind tibia. The genitalia of these two species are very differ-

ent. The males of the present species are unique in having the truncate, spinose gnathos of the male genitalia.

ETYMOLOGY: The specific name is from the Latin *truncatus*, meaning truncated, in reference to the shape of the gnathos.

GROUP II

Dentinalia schajovskoyi, NEW SPECIES

Figures 4, 10, 14

DIAGNOSIS: This is the only known species of Andean Nacophorini that has the upper surface of the forewings yellowish ochre or pale orange-brown.

MALE: Head with vertex and front yellowish ochre or pale orange-brown, some specimens with dark brown scaling across top of front and with some white scaling laterally; front flat; palpi with third segment very long and slender, as long as eye, basal segments having ochreous and brownish black scaling; antennae with base and scape white, longest pectinations 0.6 mm. in length. Thorax above yellowish ochre or pale orange-brown, long scaled; below paler and grayer, with some black scaling anteriorly; legs grayish white, with or without patches of brownish black scales; hind leg without hair pencil. Abdomen white above, with a few scattered black scales; below grayish white.

WINGS: Forewings elongate, pointed, and with scalloped outer margin; hind wings with outer margin scarcely scalloped.

UPPER SURFACE OF WINGS: Forewings unicolorous yellowish ochre or pale orange-brown, with variable number of small dull brown spots; without obvious pattern but with cross lines more or less indicated, dull brown; t. a. line, when present, arising about three-tenths of distance from base as broad, diffuse spot, absent in rest of wing except for possible small spot on cubital vein and larger, diffuse spot on inner margin; median line usually absent, when present, broadly curved across wing; discal dot absent; t. p. line represented by row of small venular spots when present, extending straight, or almost so, across wing; s. t. line absent; terminal area slightly, variably darkened in some specimens; terminal line black, present in at least lower part of wing, interrupted by veins; fringe white, brownish black opposite vein endings. Hind wings white; without maculation except for faint reflection of discal dot from lower surface and for extradiscal line, represented by small dark brown spots on veins; terminal line absent, or weakly represented by small black intravenular dots posteriorly; fringe white, weakly darkened opposite some vein endings.

UNDER SURFACE OF WINGS: Both wings pale ochreous, becoming grayish white posteriorly; forewings without maculation except for incomplete

t. p. line; hind wings with large, round, black discal dot and incomplete extradiscal line; terminal line absent, or with a few small black intravenular spots; fringe similar to that of upper surface.

LENGTH OF FOREWING: 16 to 19 mm.; holotype, 16 mm.

FEMALE: Similar to male; antennae simple.

LENGTH OF FOREWING: 17 to 20 mm.; allotype, 17 mm.

MALE GENITALIA: Uncus with basal portion tapering, apical part elongate, slender; gnathos longer than uncus, with very long, slender median extension; valve with costa simple, broadly sclerotized, apex rounded; cucullus with angle about middle of valve, posteriorly narrowed; anellus twice as long as wide, 1.0 mm. long, anteriorly rounded and with ventral rim, narrowed medially, posterior margin flatly M-shaped; lateral processes of anellus reduced to very small, curved, lateral pieces meeting transtilla; aedeagus 2.8 mm. in length, simple, tubelike, posterior end weakly sclerotized and pointed on one side; vesica unarmed.

FEMALE GENITALIA: Sterigma with weakly defined, narrow, transverse lamella antevaginalis; ductus bursae tapering anteriorly, sclerotized laterally; ductus seminalis arising ventrally on right side at posterior end of corpus bursae; corpus bursae very long, slender, gradually increasing in width anteriorly, and with wrinkled striations; signum elliptical, 0.5 mm. in length, anterior margin thickened and shortly stellate; apophyses anteriores 1.7 mm. in length.

TYPES: Holotype, male, San Martín de los Andes, Neuquén Province, Argentina, October 20, 1962 (M. Gentili); allotype, female, Pucará, [Lago Lacar], Neuquén Province, Argentina, December 10, 1960 (S. Schajovskoy). The genitalia of the holotype are mounted on slide FHR 16963, and of the allotype on 16917. Paratypes, all from Neuquén Province, Argentina: Pucará, [Lago Lacar], October 26, 1955, October 31, 1964, December 10, 1960 (S. Schajovskoy), two males and one female; Tromen, elevation 1000 meters, November 28, 1967 (S. Schajovskoy), one male and two females.

REMARKS: Eight specimens (four males and four females) and two genitalic dissections have been examined. There is some variability in the color of the upper surface of the forewings and in the amount of brown scaling that is present. The adults are somewhat similar in appearance to *Praeantarctia indecisa* Heimlich both in general appearance and genitalia (see Rindge, 1971, p. 377, figs. 96, 99, 101). However, the generic characters are sufficient to separate the two species.

ETYMOLOGY: I take pleasure in naming this species after Ing. Sergio Schajovskoy, who not only collected most of the known specimens of the moth, but who has also done so much other fine collecting of the Nacophorini.

Dentinalia unica (Rindge), new combination

Figure 11

Salpis unica RINDGE, 1971, p. 354, figs. 54 (holotype), 69, 70 (female genitalia).

This species was described from a single female from Malleco Province, Chile. At that time I was not certain of the generic placement of the species, stating that a study of the male and its genitalia would be needed for this purpose. A single male is now in the collection of the American Museum of Natural History; a study of it shows that the species was incorrectly placed in *Salpis*.

MALE: Similar to female; antennae simple; (hind legs missing); maculation with t. a. line of upper side of forewing more deeply indented than in female, reducing width of median area.

LENGTH OF FOREWING: 14 mm.

MALE GENITALIA: Uncus sharply narrowed from base, elongate, weakly tapering; gnathos with relatively short, narrow median extension, apically curved; valve with costa simple, swollen apically, with weak concavity between swelling and apex of valve; outer margin of valve evenly rounded; anellus broad, large, lateral margins weakly sclerotized, slightly increasing in width posteriorly to transtilla, with pointed median membranous area dorsad of very long, slender, sclerotized furca-like median extension 1.3 mm. in length, basal three-fourths of equal width, then narrowed, with more heavily sclerotized, rodlike, terminally pointed distal extension; lateral processes of anellus apparently absent; aedeagus 2.6 mm. in length, slender, of even width; vesica, when exerted, extending at about 45-degree angle to aedeagus, with single area of numerous, long and very slender spines.

The distribution of *unica* now includes the Andes Mountains of Chile in the provinces of Malleco and Ñuble. Both known specimens were captured in January.

The genitalia of this and the following species are quite distinctive from any other known Nacophorini. The males can be easily recognized by the elongate, furca-like projection of the anellus, and by the lack of any lateral processes. These two characters, by themselves, might cast some doubt that the species should be placed in the Nacophorini; however, the other characters of the adults and the genitalia of both sexes indicate that this is the correct tribal placement.

The hind legs of the single known male are lacking. Based on the apparent close relationship between this and the following species, which has the tibial hair pencil, I would expect *unica* also to have a well-developed hair pencil on the hind tibia.

***Dentinalia variata*, NEW SPECIES**

Figures 5, 6, 12, 15

DIAGNOSIS: This species is very closely related to *unica*, a moth that is found only in Chile. The present Argentinian species appears to have the upper surface of the forewings more variable in color, ranging from an almost immaculate dull brown to a well-marked, contrastingly colored brown and gray. The genitalia of the two species are closely similar; see the keys for differentiating characters.

MALE: Head, thorax and abdomen similar to those of *unica* but tending to be more variable in color, ranging from several shades of gray to brown; antennae simple; hind leg with strong hair pencil.

WINGS: Shape similar to those of *unica*.

UPPER SURFACE OF WINGS: Forewings variable in color, ranging from almost unicolorous dark brown or dark grayish brown, with practically no maculation, to various shades of dark gray and dark brown, with clearly defined maculation and with terminal area of wing tending to be contrastingly lighter in color than dark brown or dark grayish brown median area; maculation as in *unica*. Hind wings as in *unica* but tending to be paler gray.

UNDER SURFACE OF WINGS: Similar to that of *unica* but more variable in color, and with maculation expressed in various degrees of strength.

LENGTH OF FOREWING: 14 to 15 mm.; holotype, 15 mm.

FEMALE: Similar to male but with upper surface of forewings tending to be grayer, and with terminal area varying from white, through pale gray, to dull brown.

LENGTH OF FOREWING: 14 to 15 mm.; allotype, 14 mm.

MALE GENITALIA: Similar to those of *unica*, differing mainly as follows: valve with costa barely swollen apically, then evenly rounded to apex of valve; aedeagus 2.5 to 2.8 mm. in length.

FEMALE GENITALIA: Similar to those of *unica*, differing mainly as follows: sterigma with lamella antevaginalis tending to have anterolateral margins concave, slightly longer, with posterior margin tending to be flatter; ductus bursae shorter, about 0.5 mm. in length (0.7 mm. in *unica*), with transverse ridges reduced or absent; corpus bursae tending to become more evenly enlarged anteriorly, and to have somewhat more prominent sclerotized area anterior of ductus bursae ventrally; apophyses posteriores 1.8 to 2.1 mm. in length.

TYPES: Holotype, male, Pucará, [Lago Lacar], Neuquén Province, Argentina, November 10, 1969 (S. Schajovskoy); allotype, female, Tromen, elevation 1000 meters, Neuquén Province, Argentina, November 28, 1967



FIGS. 13-15. Female genitalia of *Dentinalia*. 13. *D. truncata*, new species, allotype. 14. *D. schajovskoyi*, new species, allotype. 15. *D. variata*, new species, paratype.

(S. Schajovskoy). The genitalia of the holotype are mounted on slide FHR 16987, and of the allotype on 17032. Paratypes, all from Neuquén Province, Argentina, and collected by S. Schajovskoy unless otherwise specified: Tromen, elevation 1000 meters, November 28, 1967, seven males, five females, December 16, 1962, one male; Pucará, [Lago Lacar], various dates from mid-September through early January, 1952-1967, nine males, five females; San Martín de los Andes, no date, one female, December 24, 1958 (M. Gentili), two females, January 16, 1959 (M. Gentili), one female; Pampa Quillen, elevation 1250 meters, December 28, 1967, two females; Lago Hermoso, November, 1949, one female, January 19, 1959, one female.

REMARKS: Thirty-seven specimens (18 males and 19 females) and six genitalic dissections (three males and three females) have been studied. The moth is so closely related to *unica* that it might be placed as a subspecies of the Chilean species. I have retained *variata* as distinct, based on the differences noted in the description and keys. More Chilean material is needed to ascertain the variability of that population, and to find out how this relates to the present species.

ETYMOLOGY: The specific name is from the Latin *variatus*, varied, in reference to the color of the forewings.

GENUS *SALPIS* MABILLE

Salpis MABILLE, 1885, p. 65. RINDGE, 1971, p. 320.

Seven new species are described in this genus; one other is placed in it for the first time and is redescribed. All of these are very distinct from the 33 previously known species. Of these eight species, two are placed in my group I, five in group III, and one in group IV. One of the species is known from Venezuela and Ecuador; this is by far the most northern distribution record for a member of *Salpis*. A second species is from Bolivia; the other six are from Argentina. Heretofore 12 were known from Argentina; the total is now 18 from that country. Ten of these are found in Neuquén Province; this probably reflects where collectors have worked more than it does the true distribution of the different species.

With one definite, and possibly two more exceptions, all the new species agree with the description of the adults given in my revision; all of them agree with the genitalic descriptions. The exceptions are species of the *orbifera* complex in group III; one possesses small anterior and posterior median tufts, plus a pair of lateral posterior tufts appearing as a layer of scales over the anterior portion of the abdomen. The other possible exceptions are species closely related to the above one that have faint traces

of anterior and/or posterior median tufts; more and fresher material is needed to be absolutely certain of their presence or absence. This marks the first known appearance of thoracic tufts in *Salpis*; their lack was one of the characters used in my key to the genera (1971, p. 310) to distinguish this genus.

My description of the female genitalia stated that the signum was present except in one species. Now that *unica* Rindge has been removed from the genus, all known species have a signum.

My original group III had nine species; without *unica* the number is reduced by one. Because five more species are added to the group in this paper, a revised key to the species based on male genitalia is given; this replaces couplets 12 through 17 in my original key.

KEY TO SPECIES OF GROUP III BASED ON MALE GENITALIA

1. Anellus with posterior projection shorter than anterior portion of structure 2
- Anellus with posterior projection equal to or longer than anterior portion of structure 10
- 2(1). Processes of anellus swollen, broad, flattened, with at most small pointed apical portion 3
- Processes of anellus not swollen, slender, round for most of their length 4
- 3(2). Processes of anellus evenly tapering to pointed apex *rubens*
- Processes of anellus widest medially, outer margin irregularly dentate, and apex curved *scodionata*
- 4(2). Apex of each valve pointed and sclerotized, with costa swollen apically 5
- Apex of each valve broadly rounded, membranous, costa not swollen apically 7
- 5(4). Valvular process angled distally *orbifera*
- Valvular process straight or slightly swollen distally 6
- 6(5). Processes of anellus 1.0 mm. in length *recta*
- Processes of anellus 1.25 mm. in length *globosa*
- 7(4). Processes of anellus flat basally, posteriorly rounded and pointed 8
- Processes of anellus rounded, tapering 9
- 8(7). Anellus with posterior projection prominent, about two-thirds length of anterior portion of anellus; uncus 1.25 mm. in length ... *albipunctaria*
- Anellus with posterior margin having small triangular projection; uncus 1.1 mm. in length *decora*
- 9(7). Anellus with single sagittate sclerotized posterior projection .. *carneitincta*
- Anellus with posterior projection having broad lateral shoulder-like processes, their length equal to length of projection itself *puechi*
- 10(1). Exserted vesica with thick spine near apex of aedeagus 11
- Exserted vesica without thick spines 12
- 11(10). Uncus 1.4 mm. in length; lateral processes of anellus with apical portion

- long, slender, of equal width *brevis*
 Uncus 1.1 mm. in length; lateral processes of anellus wide, tapering to
 very small, pointed apex *lancea*
 12(10). Anellus with combined lengths of anterior portion and posterior extension
 1.7 mm.; lateral processes with large base 0.8 mm. long, narrowly
 joined to anellus *synopsioides*
 Anellus with combined lengths of anterior portion and posterior extension
 1.4 mm.; lateral processes with base 0.6 mm. long, broadly joined to
 anellus *pisinna*

GROUP I

Salpis interrupta, NEW SPECIES

Figures 16, 24, 32

DIAGNOSIS: This species is apparently related to *virgata* Rindge; it may be recognized by the longer pectinations of the male antennae, by the upper surface of the forewings being a dark brown in the male and gray in the female, with the maculation being separated into a large anterior section and a much smaller posterior one. The male genitalia differ from those of *virgata* by the enlarged apex of the costa, and fewer spines in the vesica in the present species.

MALE: Head with vertex grayish brown; front pale grayish brown, with transverse band of blackish brown scales across top; palpi rising to middle of eye, with mixture of pale grayish brown and blackish brown scales; antennae with longest pectinations 0.8 mm. in length. Thorax grayish brown above and below; legs grayish brown, darker scaled above, with ends of tarsal segments pale gray. Abdomen grayish brown above and below, with scattered dull black scales above, and with posterior margins of segments narrowly and faintly paler in some specimens.

WINGS: Forewings with apex bluntly pointed and with rounded outer margin; all wings with scalloped outer margins.

UPPER SURFACE OF WINGS: Forewings evenly dark grayish brown, with obscure maculation; cross lines tending to be absent or interrupted in middle of wing; veins brownish black in outer portion of wing; pattern weakly indicated, dark brown, in two parts, large anterior one and much smaller posterior one, with both tending to be outlined with narrow black band; anterior part of pattern outlined basally by t. a. line, extending as far as vein Cu₁, running outwardly on vein Cu₂, then back to costa on t. p. line, and tending to have center of outlined area slightly darkened by broad, suffuse, median shade band; posterior part of pattern extending from fold to posterior margin, narrow, being elongate along anal vein; s. t. line variable, pale gray, usually indicated by tornal spot only; terminal

line represented by black intravenular spots; fringe concolorous with wing. Hind wings grayer than forewings, slightly paler; without maculation except for dark, prominent, complete line across middle of wing, roughly W-shaped in course, and sometimes somewhat thickened on veins; terminal line and fringe similar to those of forewings.

UNDER SURFACE OF WINGS: All wings brown; forewings without maculation except for very faint trace of discal spot and incomplete t. p. line; hind wings with prominent discal spot and complete extradiscal line; terminal line absent; fringe concolorous with wings.

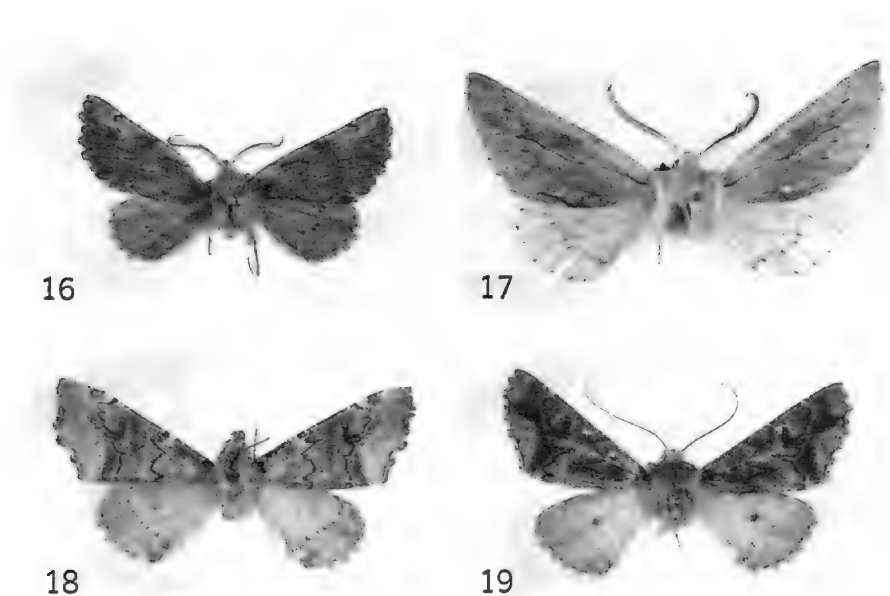
LENGTH OF FOREWING: 15 to 16 mm.; holotype, 16 mm.

FEMALE: Similar to male but with upper surface of forewings gray, resulting from mixture of pale gray, dark gray, and brown scales; maculation as in male but contrasting and prominent; hind wings gray, slightly paler than forewings, with maculation similar to that of male; under surface like that of male but gray; antennae simple.

LENGTH OF FOREWING: 16 (allotype) to 17 mm.

MALE GENITALIA: Uncus long and slender, 1.1 mm. in length; socius moderate, with long setae; gnathos with elongate median area having small, posteriorly projecting teeth; valve with costa strongly concave, outwardly projecting near apex, and having raised ridge distally along inner margin; apical portion of valve with area of elongate setae; anellus with median anterior incision, without median sclerotized ridge, with posterior margins continued to form elongate, slender, tapering projection about two-sevenths of length of anellus; paired structures of anellus 0.6 mm. in length, arising from posterior end of narrowly elliptical bases 0.35 mm. in length, evenly curving posteriorly, heavily sclerotized, apically pointed; cristae very long, inconspicuous; aedeagus 2.0 mm. in length, anterior end slightly curved, ductus ejaculatus entering straight portion of aedeagus, and with posterior end sclerotized and rounded; vesica armed with at least two spines, longer, slightly curved, one 0.4 mm. in length near apex of aedeagus, second, straight one 0.25 mm. in length situated posterodistally, and with vesica having small lateral sac on opposite side from sclerotized end of aedeagus.

FEMALE GENITALIA: Sterigma with elongate, transverse lamella antevaginalis slightly narrowed medially, posterior margin widest laterally, having blunt points, with small, weakly M-shaped incision medially, and having anterolateral margins narrowly attenuate and extending toward apophyses anteriores; ductus bursae very short, much wider than long, inconspicuous; ductus seminalis apparently arising ventrally; corpus bursae with sclerotized, somewhat dorsally directed posterior portion, then becoming membranous and gradually increasing in width anteriorly;



FIGS. 16–19. Adults of *Salpis*. 16. *S. interrupta*, new species, holotype male. 17. *S. nigrivenosa*, new species, holotype male. 18. *S. synopsisoides* (Dognin), male. 19. *S. pisinna*, new species, holotype male. All figures $\times 1.1$.

signum small, scarcely 0.2 mm. in length, weakly sclerotized, not prominent, situated on left side; apophyses posteriores 2.4 mm. in length.

TYPES: Holotype, male, Pucará, [Lago Lacar], Neuquén Province, Argentina, September 14, 1964 (S. Schajovskoy); allotype, female, same data but October 10, 1960. The genitalia of the holotype are mounted on slide FHR 16969, and those of the allotype on 16921. Paratypes: same data as types, October, 1953, one male and one female, October 6, 9, 1964, two males.

REMARKS: Six specimens (four males and two females) and two genitalic dissections have been studied. The males show some variation in the tone of brown on the upper surface of the forewings, depending upon the relative number of brown and gray scales.

This species is very distinct and easily recognized by the dimorphic wing color of the two sexes and by the pattern of the forewings. However, its exact relationships with the other species of *Salpis* are not clear at this time. Part of the difficulty is due to our lack of material in the group of species consisting of *tessera* Rindge (male unknown), *batiola* Rindge (male unknown), *sticte* Rindge (male unknown), and *virgata* Rindge (female unknown). The male genitalia key out to my couplet 8, for *dentilineata*



20



21



22



23

FIGS. 20–23. Adults of *Salpis*. 20. *S. decora*, new species, allotype female. 21. *S. recta*, new species, holotype male. 22. *S. globosa*, new species, holotype male. 23. *S. gentilii*, new species, holotype male. All figures $\times 1.4$.

(Butler) and *virgata*; the female structures go to *batiola* in couplet 4. When the sexes of all the different species are known it will be possible to place this moth with greater certainty.

ETYMOLOGY: The specific name is from the Latin *interruptus*, meaning interrupted, in relation to the pattern of the forewings.

***Salpis nigrivenosa*, NEW SPECIES**

Figures 17, 25, 33

DIAGNOSIS: This is the largest known species in group I. It has unicolorous gray forewings, without the usual cross lines but with the cubital vein black scaled. The male genitalia are similar to those of *chilenaria* (C. Felder, R. Felder, and Rogenhofer) in the shape of the valves, but the spining of the vesica is more like that of *mutabilis* Rindge. The female genitalia are similar to those of *mutabilis* but are larger, and have a more strongly developed lamella antevaginalis with a deeper median indentation.

MALE: Head with vertex pale gray; front whitish gray, dull black

dorsally; palpi not attaining middle of eye, with mixed gray and dull black scales; antennae with white scape, black pectinations, with longest pectinations 1.5 mm. in length. Thorax unicolorous pale gray above; slightly darker below, with grayish black scaling laterad and ventrad of head; legs grayish white, with some dull black scaling, tarsi tending to be brown. Abdomen above pale gray, with a few, scattered dark scales; paler below.

WINGS: Forewings with pointed apex and with very slight concavity below apex; all wings with outer margins weakly scalloped.

UPPER SURFACE OF WINGS: Forewings with unicolorous mixture of pale gray and brown scales, producing a medium gray color; without usual cross lines although these may be very weakly indicated, especially t. p. line; maculation consisting of black scaling on cubital vein from base of wing to basal portions of veins M_3 , Cu_1 , and Cu_2 , and with variable amount on vein M_1 ; some specimens with faint trace of t. p. line extending along ends of black scaling on veins; outer portion of wing with some veins very faintly and narrowly marked with black; terminal line represented by prominent black intravenular dots; fringe white, darkened opposite intravenular dots. Hind wings paler than forewings, pale gray with evenly scattered grayish brown scales; discal dot nebulous; extradiscal line complete, dark gray, blackish on veins; terminal line and fringe similar to those of forewings.

UNDER SURFACE OF WINGS: Similar to upper surface in color, or with forewings slightly paler; maculation of forewings obsolescent, veins slightly darkened, discal dash weakly indicated, and t. p. line represented by dark venular dashes, of hind wings similar to upper surface but with extradiscal line more weakly represented; terminal line and fringes similar to those of upper surface.

LENGTH OF FOREWING: 22 to 25 mm.; holotype, 22 mm.

FEMALE: Similar to male; antennae shortly and evenly pectinate for entire length except for terminal four segments, with pectinations 0.3 mm. in length.

LENGTH OF FOREWING: 23 mm. (allotype).

MALE GENITALIA: Uncus long and slender, 1.4 mm. in length; socius small; gnathos slender, with tapering, elongate median protuberance; valve with costa broad, sclerotized, angled at about three-fourths of length, with band of thick setae along anterodistal margin in middle of valve, outer portion of valve swollen distally; anellus with posterior margin bilobed, with small median indentation, without median ridge; paired structures of anellus 0.9 mm. in length, arising from moderate base about 0.4 mm. long, evenly curving posteriorly to pointed apex, finely setose; cristae very long, moderate in number; aedeagus 2.2 mm. in length,

straight, apical portion elongate, broadly rounded and sclerotized at apex; vesica, when exerted, extending at about right angle to aedeagus, with about five short spines, distal, incomplete, slender band of spinules, being bases of slender, deciduous spines.

FEMALE GENITALIA: Sterigma with very wide, well-sclerotized lamella antevaginalis, posterior margin deeply indented medially, laterally extending anteriorly to slender point on each side; ductus bursae very short, sclerotized, sharply decreasing in width anteriorly; ductus seminalis arising on right side at end of corpus bursae; latter 6.2 mm. in length, with posterior, tubelike, striate portion one-fourth to one-third length of corpus bursae, posterior end large, membranous, weakly swollen; signum large, 0.7 mm. in length, elliptical, situated dorsally, purselike, with posterior opening, and with numerous short spinelike projections dorsally and around margins; apophyses posteriores 1.9 mm. in length.

TYPES: Holotype, male, and allotype, female, Chapelco, elevation 1400 meters, Neuquén Province, Argentina, November 7, 1964 (S. Schajovskoy). The genitalia of the holotype are mounted on slide FHR 16961, and those of the allotype on 16915. Paratypes: same data as types, two males; Pucará, [Lago Lacar], Neuquén Province, Argentina, October 22, 1955 (S. Schajovskoy), one male.

REMARKS: Five specimens (four males and one female) and two genitalic dissections have been studied. There is some variation in the color of the upper surface of the forewings from a rather pale gray to a darker, faintly brownish gray; this may be due to individual differences, or to the age of the specimen, becoming browner with time of flight, or to both.

The male genitalia key out to my couplet 9, for *mutabilis* and *chilenaria*; the female genitalia to couplet 19, *chilenaria* and *carneitincta* Prout. The present species is differentiated according to its male genitalia from *mutabilis* and *chilenaria* in the Diagnosis. It differs, in the female, from *chilenaria* by the different shape of the prominent lamella antevaginalis, and by the absence of this prominent transverse structure in *carneitincta*.

ETYMOLOGY: The specific name is from the Latin *nigra*, black, and *venosa*, veined, in reference to the pattern of the forewings.

GROUP III

Salpis decora, NEW SPECIES

Figures 20, 26, 34

DIAGNOSIS: This species is unique in the genus in its type of maculation. The genitalia show relationships with *lancea* Rindge; the male structures of the present species can be recognized by the larger paired structures of

the anellus, and in the female by the less prominent lamella antevaginalis, as compared with the corresponding structures of *lancea*.

MALE: Head with vertex grayish brown; front gray, with some blackish brown hairlike scales along eyes; palpi shorter than those of *lancea*, rising to about middle of eye, covered with long gray and brown scales, and with a few short black scales on palpi; antennae simple. Thorax grayish brown above and below; legs gray, with brown scaling on outer surface; hind legs without hair pencil. Abdomen pale gray or pale grayish brown, with scattered dark scales above.

WINGS: Forewings broad, pointed; outer margins of all wings scalloped.

UPPER SURFACE OF WINGS: Forewings brown, pattern dark brown, outlined by gray or pale gray; cross lines absent; discal dash black, elongate, prominent; pattern with anterior portion extending from about one-fourth distance from base on costa to near apex, having triangular inset above discal dash; median portion of pattern approximately in shape of large inverted triangle, having anterior margin with triangular inset below discal dash; lower portion of pattern smaller than other two, along inner margin into cell Cu_2 in outer half of wing, wider than high, and somewhat narrowed along anal vein; costa pale grayish brown above radial vein, as far as beginning of anterior portion of pattern; central portion of wing, basad of pattern, dark grayish brown to brown, with black scaling along cubital vein; subterminal area grayish white, sharply delimiting outer edge of pattern, with grayish white scaling often narrowly outlining elements of pattern, and having narrow dark brown or brownish black band paralleling wing margin; terminal line black, slender, narrowly interrupted by veins; fringe dark brown, very narrowly grayish white at base and terminally. Hind wings brown, somewhat paler than forewings; without maculation except for nebulous dark discal dot and for complete s. t. line, with latter outlined with nebulous band of pale grayish brown; terminal line and fringe similar to those of forewings.

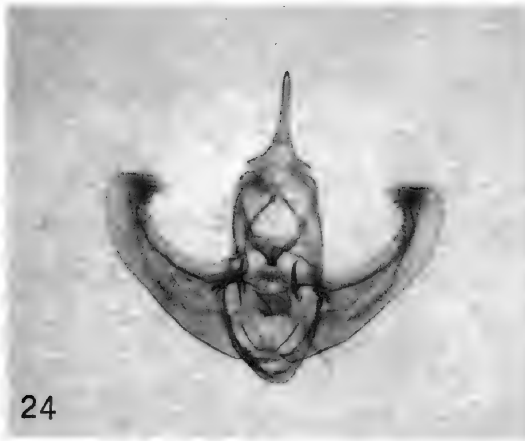
UNDER SURFACE OF WINGS: All wings grayish brown; discal dots present, those on hind wings tending to be slightly larger than those on forewings; both wings with outer cross line, on forewings gray, narrow, fading out posteriorly, on hind wings brownish black, complete; terminal line and fringe similar to those of upper surface.

LENGTH OF FOREWING: 14 to 15 mm.; holotype, 15 mm.

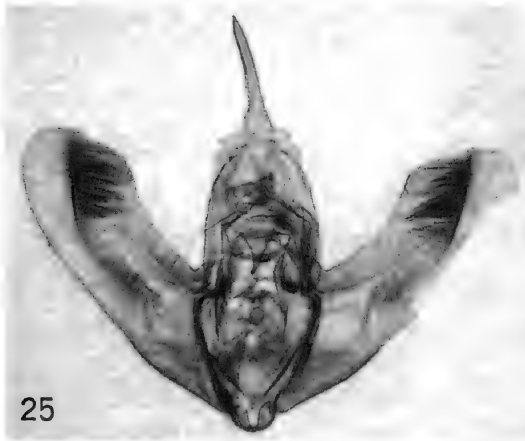
FEMALE: Similar to male; antennae simple.

LENGTH OF FOREWING: 14 to 16 mm.; allotype, 16 mm.

MALE GENITALIA: Uncus elongate, 1.1 mm. in length, dorsal surface without setae; socius small; gnathos with moderately wide median area having posteriorly directed, short, thick spines; each valve with costa



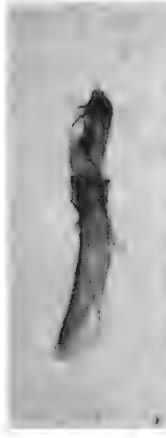
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25



26



FIGS. 24-26. Male genitalia of *Salpis*. 24. *S. interrupta*, new species, holotype. 25. *S. nigrivenosa*, new species, holotype. 26. *S. decora*, new species, holotype.

mostly straight, apex curved and pointed; single, small, slender fingerlike protuberance having from four to six apical spines, with area of elongate setae near end of valve; anellus with straight anterior margin, with anterior median ridge, and with short, weakly sclerotized, bluntly pointed posterior projection extending only to middle of bases of lateral processes; last heavily sclerotized, 0.7 mm. in length, with very long base 0.4 mm. in length, sharply curved and pointed posteromedially, apically pointed, with variable number of dorsolateral teeth; cristae long, inconspicuous; aedeagus 2.5 mm. in length, with sclerotized, rounded apex; vesica extending at 45-degree angle to aedeagus, with one spine 0.25 mm. in length near aedeagus, and with second spine and incomplete median band of numerous thin setae. Abdomen without row of setae on third segment.

FEMALE GENITALIA: Sterigma with moderately large winglike lamella antevaginalis, central area deeply indented and having ventral covering extending half length of lateral areas, these areas roughly triangular in outline with each apex pointed posteriorly, and with anterior margin of sterigma rounded; ductus bursae very short, rather poorly defined, situated on angle to left side of sinus vaginalis; ductus seminalis arising ventrally at posterior end of corpus bursae; latter with posterior end sclerotized, angled anteriorly, with longitudinal striations, anterior portion membranous, smooth, about twice as wide and two-thirds as long as posterior portion; signum small, 0.2 mm. in length, situated dorsally, and projecting into corpus bursae; apophyses posteriores 2.7 mm. in length.

TYPES: Holotype, male, Junin de los Andes, Neuquén Province, Argentina, October 18, 1958 (S. Schajovskoy); allotype, female, Pucará, [Lago Lacar], Neuquén Province, Argentina, September 30, 1964 (S. Schajovskoy). The genitalia of the holotype are mounted on slide FHR 16967, and those of the allotype on 16919. Paratypes, all from Neuquén Province, Argentina: Junin de los Andes, October 18, 1958, October 29, 1959, October 27, 1961 (S. Schajovskoy), two males and three females; Piedra de Aguila, October 9, 1958 (M. Gentili), one male; San Martín de los Andes, October 7, 10, 18, 1958 (M. Gentili), one male and two females; Pucará, [Lago Lacar], October 30, 1960 (S. Schajovskoy), one female.

REMARKS: Twelve specimens (five males and seven females) and three genitalic dissections (two males and one female) have been studied. This very distinctly patterned species cannot be confused with any other described *Salpis*. The middle, triangular area of the pattern of the forewings varies from solid brown to having the veins that run through it marked with gray scaling.

The male genitalia key out to my couplet 14, for *lancea* and *rubens* Prout; the female genitalia to couplet 21, for *lancea* and *tuberata* Rindge. The

genitalia of both sexes of the present species are differentiated from *lancea* in the Diagnosis. The male structures can be separated from those of *rubens* by the larger and more prominent paired structures of the anellus in the present species; in the female by the prominent, winglike lamella antevaginalis, which is lacking in *tuberata*.

ETYMOLOGY: The specific name is from the Latin *decorus*, meaning beautiful or adorned, in reference to the pattern of the wings.

Salpis synopsioides (Dognin), new combination

Figures 18, 27

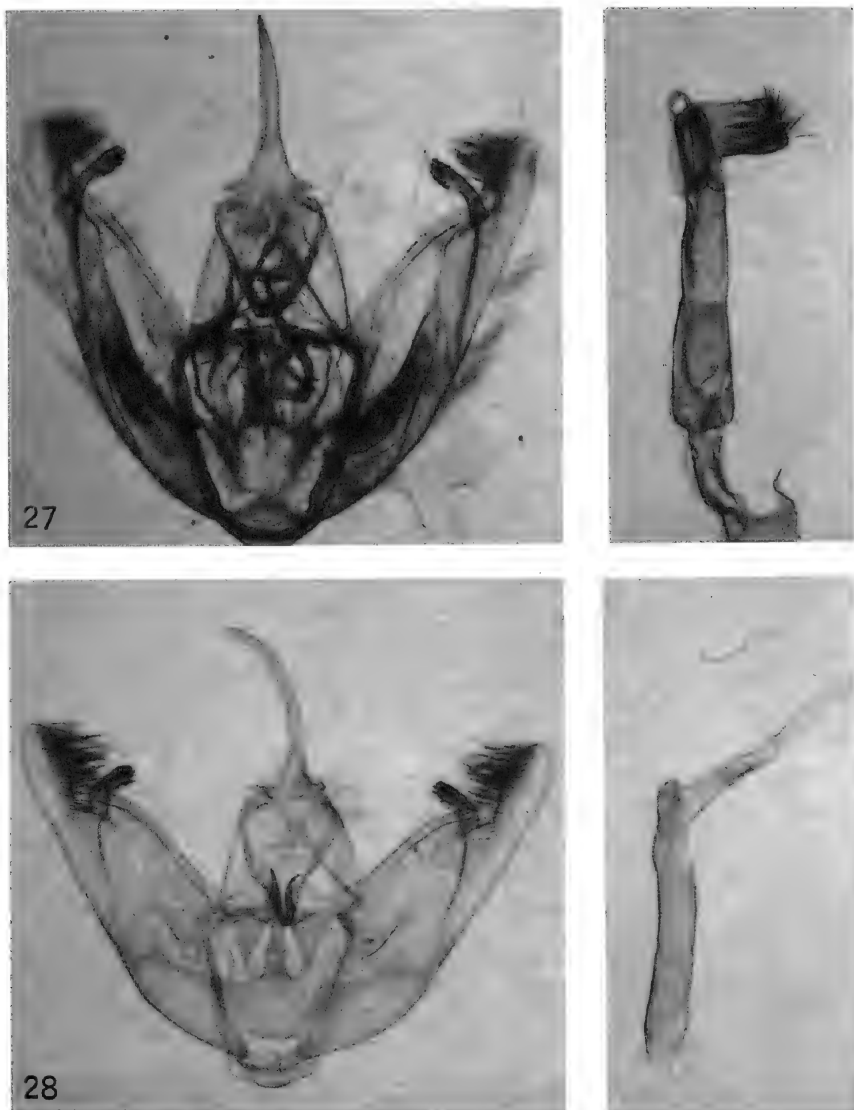
Azelina synopsioides DOGNIN, 1893, p. 573. POOLE, 1969, pp. 276, 284.

DIAGNOSIS: This species is easily recognized by the upper surface of the forewings being brown medially, broadly whitish gray outwardly, and by the course of the two distinct cross lines. The male genitalia are very distinct with the elongate posterior extension of the anellus and the very large lateral processes.

MALE: Head with vertex and front grayish brown; palpi rising to middle of eye, third segment relatively short, one-half length of eye, short scaled, basal segments long scaled below, dull brown; antennae serrate. Thorax above with mixture of gray and brown scales; below grayer; legs grayish brown.

WINGS: Forewings elongate, apically produced, with irregular outer margin; hind wings scarcely indented between veins.

UPPER SURFACE OF WINGS: Forewings whitish gray, basal area partially covered with grayish brown scales, median area broadly brown, outer part with mixture of whitish gray and gray scales; cross lines black, narrow, complete; trace of basal line just below costa; t. a. line arising about one-third of distance from base, swinging outward into cell, sharply angled basally to cubital vein, broadly curved outwardly in cells with deep basal tooth on anal vein, and entire line with broad, basal white shade band; median line absent; discal spot small, white, surrounded by black ring; t. p. line arising about two-thirds of distance from base as dark brown dash, black line broadly outcurved between veins anteriorly, extending basally for short distance on vein M_3 , then going at right angle to connect with discal dot, with small, narrow, outwardly lobate projection in cell M_3 , proceeding in weak concave curve to anal vein, with inward tooth on vein Cu_2 , and with small outward angle between anal vein and inner margin; t. p. line bordered outwardly by patch of pure white on costa, and by broad, dark brown band in lower portion of wing, being interrupted opposite narrow lobate projection of line; s. t. line absent; terminal



FIGS. 27, 28. Male genitalia of *Salpis*. 27. *S. synopsioides* (Dognin). 28. *S. pisinna*, new species, holotype.

line obsolescent, forming intravenular spots in cells M_1 , M_2 , and Cu_1 ; fringe dark brown, with white scaling of varying widths in cells in lower part of wing. Hind wings white or pale grayish white basally, with outer portion brownish gray; discal dot diffuse, obsolescent; extradiscal line

brownish black, complete, roughly paralleling outer margin; s. t. line absent; terminal line weakly represented, with small intravenular dots; fringe white, becoming brown opposite vein endings.

UNDER SURFACE OF WINGS: Forewings grayish white, cell with numerous grayish brown scales, and wing posteriorly white; hind wings white, evenly covered with scattered dark brown scales; discal dots present on all wings, elongate and narrow on forewings, round on hind wings; t. p. line weakly represented anteriorly; extradiscal line complete; terminal line and fringe similar to those of upper surface.

LENGTH OF WING: 18.5 mm.

FEMALE: Unknown.

MALE GENITALIA: Very large; uncus 1.7 mm. in length, slender; socius small; gnathos with small median area having several small posteriorly directed teeth; valve with costa convex to near apex, then slightly tapering to narrowly rounded apex, apical region with area of elongate setae; finger-like protuberance arising about two-thirds of distance from base, large, becoming flattened and slightly widened apically, distal margin rounded and bearing single row of short, thick spines; cucullus swollen, sclerotized, with sclerotized band extending to base of finger-like protuberance, with narrow longitudinal ridge extending up basal portion of protuberance, and with posteromedial angle of band having small, slender, asymmetrical projection and group of setae; anellus sclerotized, rounded anteriorly, with poorly defined median ridge, 0.7 mm. in length, and with much longer tapering, pointed posterior spinelike projection 1.0 mm. in length; lateral processes very large, each arising from narrow, weakly curved base 0.8 mm. in length, extending anteriorly to narrowly join anellus, with process arising from posterior half of base, tapering to sharp, narrow, posteriorly curved point well posteriad of median area of gnathos and posterior end of anellus; cristae long; aedeagus 3.0 mm. in length, posteriorly sclerotized and rounded; vesica extending at 90-degree angle to aedeagus, with partial median band of numerous slender setae. Abdomen without row of setae on third segment.

FEMALE GENITALIA: Unknown.

TYPES: Dognin described *synopsioides* from two male specimens, both of which are in the collection of the National Museum of Natural History. I hereby designate as lectotype the larger and better marked of the two specimens; it is USNM 31689.

TYPE LOCALITY: The lectotype is labeled "Environs de Loja, Equateur, 1892." The original description merely gives Loja, Ecuador, as the type locality.

DISTRIBUTION: Southern Ecuador (Loja); western Venezuela (Mérida).

TIME OF FLIGHT: Unknown.

REMARKS: One specimen and one genitalic dissection have been studied. The above description is based on the Venezuelan moth in the collection of the American Museum of Natural History. The distribution of this species makes it the most northern of any in the genus. Poole (1969) pointed out that this species is related to members of the genus *Dasystole* Warren, but that it did not belong in that genus.

The male genitalia key out to *carneitincta* Prout in my couplet 17. The present species may be separated from Prout's by the different configuration of the anellus, as *synopsioides* has a much longer posterior projection from that structure.

Salpis pisinna, NEW SPECIES

Figures 19, 28

DIAGNOSIS: This species is similar to *synopsioides* but can be distinguished from that species by the upper surface of the forewings being darker in color, and by the more angulate cross lines. Good specific differences are present in the male genitalia.

MALE: Head with vertex and front with mixture of pale gray and grayish black scales; palpi not attaining middle of eye, third segment relatively short, one-half length of eye, short scaled, basal segments with mixture of pale gray, dark gray, and grayish black scales; antennae shortly serrate. Thorax above grayish brown, slightly paler laterally, apparently with posterior median tuft; below grayish brown; legs with mixture of pale gray, grayish brown, and dark gray scales, with ends of segments of tarsi narrowly pale gray; hind tibia without hair pencil.

WINGS: Forewings elongate, apically produced, with outer margin scalloped; hind wings scarcely indented between veins.

UPPER SURFACE OF WINGS: Forewings dark gray, slightly paler in part of median area and outwardly; cross lines black, narrow, complete; trace of basal line just below costa; t. a. line arising on costa one-third of distance from base, similar in course to that of *synopsioides* but more angulate; median line absent; discal dash black, prominent, about 1.5 mm. in length; t. p. line arising on costa three-fourths of distance from base, similar in course to that of *synopsioides* but with line in lower portion of wing more outwardly oblique; t. p. line bordered outwardly by broad, nebulous, dull black band, narrowed in cell M_3 , and much enlarged in cells M_1 and M_2 , narrowing outwardly and connecting with terminal intravenular spot; s. t. line absent; terminal line black, incomplete, forming intravenular

spots in cells R_5 , M_1 , M_2 , Cu_1 , and Cu_2 ; fringe concolorous with wing, incompletely grayish white at base, and with white scaling of various widths in cells. Hind wings grayish white, becoming dull gray distally; discal spot grayish black, round, somewhat diffuse; extradiscal line obsolescent; s. t. line absent; terminal line represented by small intravenular spots; fringe white basally, dull grayish brown distally, tending to be darker opposite vein endings.

UNDER SURFACE OF WINGS: Forewings dull gray anteriorly, posteriorly white; hind wings grayish white, with scattered blackish brown scales distally; discal dots present on all wings, brownish black, elongate on forewings, round on hind wings; t. p. line obsolescent anteriorly, absent posteriorly; extradiscal line obsolescent; terminal line obsolescent, with a few small, weakly represented intravenular dots; fringe similar to that of upper surface.

LENGTH OF FOREWING: 18 mm. (holotype).

FEMALE: Unknown.

MALE GENITALIA: Similar to those of *synopsioides*, differing mainly as follows: slightly smaller; uncus slightly narrower; valve with finger-like projection more basad, arising three-fifths of distance from base, shorter, wider, more curved; cucullus with sclerotized band and narrow ridge extending to base of projection but without small projection at postero-medial angle; anellus with anterior part more broadly rounded basally, 0.5 mm. in length, posteriorly tapering, pointed projection 0.9 mm. in length; lateral processes with each base 0.6 mm. in length, broadly joined to anellus, with process much wider basally, sharply narrowed to curving, pointed apex; aedeagus 2.6 mm. in length; vesica extending at 45-degree angle to aedeagus, with partial median band of spicules representing bases of numerous small setae. Abdomen without row of setae on third segment.

FEMALE GENITALIA: Unknown.

TYPE: Holotype, male, Cochabamba (? city or department), Bolivia, elevation 3100 meters, November, 1950; from the collection of Grace H. and John L. Sperry. The genitalia of the type are mounted on slide R. W. Poole 11029. It seems probable that the type locality refers to the department rather than to the city; the latter is at a somewhat lower elevation, although the mountains nearby go up to 3100 meters.

REMARKS: One specimen and one genitalic dissection have been studied. The male genitalia of *pisinna* can be distinguished from those of *synopsioides* by the shorter and wider finger-like projections of the valves, and by the different shape of the lateral processes of the anellus.

ETYMOLOGY: The specific name is from the Latin *pisinnus*, small, in relation to the projection from the valve.

Salpis recta, NEW SPECIES

Figures 21, 29

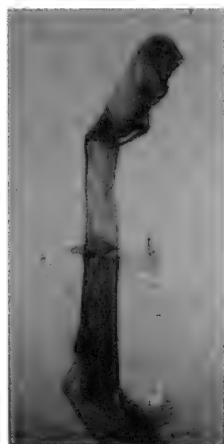
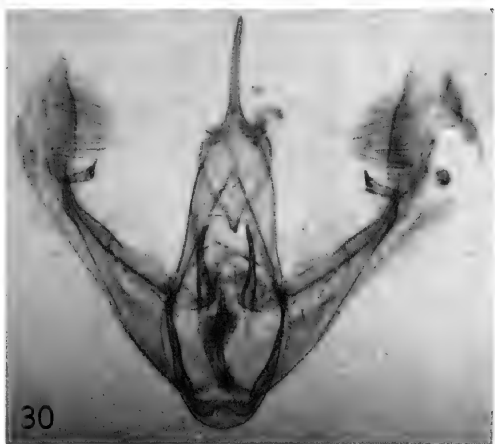
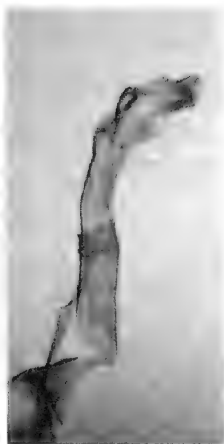
DIAGNOSIS: This species is allied to *orbifera* Prout, and may be recognized by its white, contrastingly colored hind wings and by differences in maculation. The male genitalia have the apex of each valve pointed and the valvular process straight; in *orbifera* the process is angled terminally.

MALE: Head with vertex and front with dark gray scales having white apices, varying in shape from hairlike to spatulate dorsally across front; palpi varying in height from bottom to middle of eye, with mixture of long gray and white scales, plus short black scales, and with terminal segment elongate; antennae with very short, thick pectinations 0.1 mm. in length. Thorax above with dark gray scales having white apices, with small anterior and posterior median tufts, and with pair of lateral posterior tufts, the last appearing as layer of scales over top of abdomen; below slightly paler; legs gray to pale gray, with dull black scales; hind tibia without hair pencil. Abdomen above gray with scattered black scales; below slightly paler.

WINGS: Forewings elongate, apex pointed; outer margin of all wings scalloped.

UPPER SURFACE OF WINGS: Forewings grayish black, resulting from combination of gray, dark gray, grayish black and black scales; veins very faintly brownish; maculation poorly defined, sometimes obsolescent; t. a. line arising at about one-third length of costa, outwardly curved into middle of wing, then swinging basally; median shade line and discal dot absent; t. p. line arising near apex, about nine-tenths of distance from base, extending to about vein Cu_2 with one concave swing, then outwardly angled to meet inner margin near outer angle; s. t. and terminal lines absent; fringe concolorous with wing opposite vein endings, slightly paler between. Hind wings white, with increasing number of pale grayish brown and dark gray scales distally, and along both anterior and anal margins; discal spot large, black; extradiscal line complete, sometimes obsolescent in cells anteriorly, paralleling outer margin at about 1.5 mm. distance except at anal angle; terminal line black, narrow, complete; fringe dark, similar to that of forewing.

UNDER SURFACE OF WINGS: Forewings whitish gray basally, becoming darker gray along costa and broadly so at apex, having incomplete t. p. line, and partial terminal line; hind wings white, with darker scales anteriorly and distally, having black discal dot, incomplete extradiscal line, and narrow terminal line; fringes concolorous with wings, slightly darkened opposite vein endings.



FIGS. 29–31. Male genitalia of *Salpis*. 29. *S. recta*, new species, holotype. 30. *S. globosa*, new species, holotype. 31. *S. gentilii*, new species, holotype.

LENGTH OF FOREWING: 13 mm. (holotype and paratypes).

FEMALE: Unknown.

MALE GENITALIA: Uncus elongate, slender, curved, 1.2 mm. in length; socius small; gnathos with relatively broad, curved, and apically pointed median area; valves slender, costa deeply concave, tapering to bluntly pointed apex; projecting armlike process straight, extending beyond costa, with sclerotized, raised, knifelike ridge across apex; apical portion of valve with large area of elongate setae; anellus with small, anterior, median incision, posteriorly with median area swollen dorsally and extending posteriorly, then narrowed into more heavily sclerotized, elongate, slightly tapering finger-like projection; paired structures of anellus large, 1.0 mm. in length, each arising from base 0.4 mm. in length, curving outwardly and then posteromedially, apically tapering to outwardly curved point; cristae very long, inconspicuous; aedeagus 3.3 mm. in length, slender, with posterior end elongate, sclerotized on one side, rounded; vesica extending at approximately 45-degree angle, with one thick, heavily sclerotized spine basally, bent back upon itself from wide base, and with distal, incomplete band of spicules, being bases of slender, deciduous spines. Abdomen without row of setae on segment A₃.

FEMALE GENITALIA: Unknown.

TYPES: Holotype, male, Varvarco, elevation 1200 meters, Neuquén Province, Argentina, November 12, 1968 (M. Gentili). The genitalia of the holotype are mounted on slide FHR 16979. Paratypes: same data as holotype, two males.

REMARKS: Three specimens and one genitalic dissection have been examined. The presence of the small thoracic tufts (anteromedian and posteromedian, plus two lateral posterior ones) may be unique characters of this species in the entire genus; whether or not they are present in *orbifera* is not known to me. There is some variation in the strength of the cross lines of the upper surface of the forewings, as they vary from being rather prominent to obsolescent.

The male genitalia of this species key out to my couplet 15, with the apex of each valve being pointed. They differ from *orbifera* in the valvular process being straight.

ETYMOLOGY: The specific name is from the Latin *rectus*, meaning straight, in reference to the shape of the valvular process.

Salpis globosa, NEW SPECIES

Figures 22, 30

DIAGNOSIS: This species is closely allied to *orbifera* Prout, as well as to

recta. *Salpis globosa* may be recognized by the upper surface of the forewings being gray, not brown as in *orbifera* or grayish black as in *recta*. The male genitalia have the apex of each valve pointed; the valvular process is straight and slightly enlarged posterodistally.

MALE: Head with vertex and front with gray scales having white apexes, varying in shape from hairlike to spatulate dorsally across front; palpi reaching bottom of eye, with mixture of long grayish white and black scales, plus short black scales, and with terminal segment elongate; antennae with very short, thick pectinations 0.2 mm. in length. Thorax above with dark gray scales having elongate white apexes, with faint trace of anterior and posterior median tufts, without lateral tufts; below slightly paler; legs gray, with numerous grayish black and black scales, ends of tarsal segments narrowly white; hind legs without hair pencil. Abdomen above gray with scattered darker scales; below slightly paler.

WINGS: Forewings elongate, apex pointed; outer margin of forewings weakly scalloped, of hind wings scarcely indented between veins.

UPPER SURFACE OF WINGS: Forewings dark gray, resulting from combination of pale gray, gray, and blackish gray scales; maculation faint but distinct, black; t. a. line obsolescent; median shade line absent; discal dot small, rounded, surrounded by outer circle 1.5 mm. in diameter; t. p. line arising near apex, nine-tenths of distance from base, roughly paralleling outer margin to middle of wing, then curving inwardly in fold, angled outward to above anal vein, then sharply basad, meeting inner margin just distad of middle; s. t. line absent; outer portion of wing with traces of black scales in middle of cells paralleling veins; terminal line weakly represented, interrupted by veins; fringe concolorous with wing, having some grayish white scaling between vein endings. Hind wings gray, paler than forewings, more or less evenly covered with grayish black scales; discal spot present, small; extradiscal line very weakly represented; terminal line grayish black, narrow, interrupted by veins; fringe concolorous with wing.

UNDER SURFACE OF WINGS: Forewings gray, with scattered pale gray and grayish black scales distally, without maculation except for incomplete t. p. line anteriorly, and fringe mostly darker than wing; hind wings paler than forewings, with scattered grayish black scales, discal dot more strongly represented than on upper surface, with obsolescent extradiscal and weakly represented terminal lines, and with fringe concolorous with wing.

LENGTH OF FOREWING: 14.5 mm. (holotype).

FEMALE: Unknown.

MALE GENITALIA: Similar to those of *recta*, differing mainly as follows:

gnathos with narrower, laterally compressed median area; valves with concave portion of costa slightly shorter, apical section of costa more elongate, concave again before more pointed apex; projecting armlike process slightly shorter and wider, extending at more of right angle to costa, weakly enlarged posterodistally, apex with from five to seven heavily sclerotized, short spines; anellus smaller, in shape of parallelogram, with posterior finger-like projection; paired structures of anellus longer, 1.25 mm. in length, each arising from small median base, with anterior extension and longer, more heavily sclerotized posterior arms slightly curving dorsally to pointed apex; aedeagus 3.1 mm. in length, with shorter posterior extension; vesica extending at about 30-degree angle, with one elongate, thick spine 0.5 mm. in length basally, recurved from large basal plate, with narrow longitudinal row of narrower, shorter, deciduous spines, and with large, distal incomplete band of spicules, being bases of slender, deciduous spines. Abdomen without row of setae on segment A₃.

FEMALE GENITALIA: Unknown.

TYPE: Holotype, male, Bahía Solano, elevation 75 meters, Comodoro Rivadavia, Chubut Province, Argentina, April 7, 1970 (M. Gentili). The genitalia of the holotype are mounted on slide FHR 16977.

REMARKS: One specimen and one genitalic dissection have been examined. It is not altogether certain whether or not this species really has the anterior and posterior median thoracic tufts; more specimens will have to be examined to be sure of this. This species has the same type of maculation on the upper side of the forewings as does *orbifera*, with the large round circle around the discal spot; these two species are the only ones known with this type of marking.

The male genitalia of this species key out to my couplet 15, with the apex of each valve being pointed. They differ from *orbifera* and *recta* in the shape of the valvular processes.

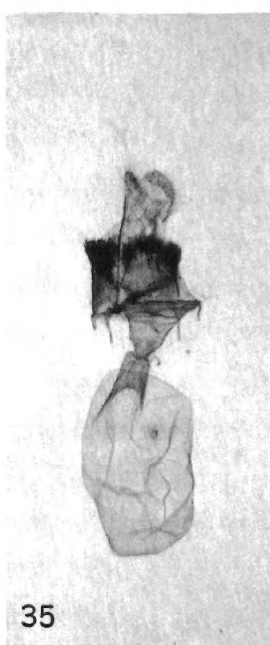
ETYMOLOGY: The specific name is from the Latin *globosus*, round, in reference to the maculation of the discal spot of the forewing.

GROUP IV

Salpis gentilii, NEW SPECIES

Figures 23, 31, 35

DIAGNOSIS: This small species has the wing shape and basic pattern of the *orbifera* complex of group III, but the genitalia are more similar to those of *penai* Rindge in group IV. The adults are easily distinguished by their elongate gray wings, with a distinctive and clear-cut pattern on the upper surface of the forewings.



FIGS. 32–35. Female genitalia of *Salpis*. 32. *S. interrupta*, new species, allotype. 33. *S. nigrivenosa*, new species, allotype. 34. *S. decora*, new species, allotype. 35. *S. gentilii*, new species, allotype.

MALE: Head with vertex having mixture of elongate grayish white and black scales; front broadly swollen, rounded, tightly covered with short grayish buff scaling; palpi reaching middle of eye, terminal segment long scaled, all segments with mixture of elongate, narrowly spatulate grayish black scales, grayish white terminally, and with longer black hairlike scales; antennae shortly pectinate, longest pectinations 0.4 mm. in length. Thorax above with elongate grayish black scales, grayish white terminally, of two types, one with bifurcate apices, second hairlike; below slightly paler than above, scales hairlike; legs dull black, narrowly white at ends of segments and at joints of tarsi; hind leg without hair pencil. Abdomen above with mixed gray and grayish brown scales, all segments with median dull black transverse band, posteriorly grayish white with incomplete dull black band or two lateral spots; below with mixture of pale gray and grayish black scales.

WINGS: Forewings elongate, produced apically; outer margin of forewing weakly scalloped, of hind wing scarcely indented between veins.

UPPER SURFACE OF WINGS: Forewings pale gray, becoming darker gray up to t. p. line, with subterminal area contrastingly grayish white, terminal area darker gray; cross lines weakly represented except for prominent t. p. line; t. a. line usually represented by black dot on costa about three-tenths of distance from base, appearing in middle of cell as basal extension of vein M_3 , extending as far as outwardly displaced ldc cross vein, sharply angled basally to run along veins M-Cu and origin of Cu_1 , then weakly biconcave to inner margin at one-third of distance from base; discal dot black, small, on weak cross vein at origin of vein M_2 ; t. p. line arising on costa near apex, about nine-tenths of distance from base, as narrow, elongate dash, and with broad dark band between it and apex, starting at vein R_5 as thick band, subparalleling outer margin but weakly biconcave, meeting inner margin two-thirds of distance from base; subterminal area grayish white, with slender grayish brown shade line distad of t. p. line; s. t. line grayish black, nebulous, extending to cell R_5 , with narrow grayish white shade line; terminal line black, narrow, complete; fringe narrowly grayish white at base, then grayish black, becoming white distally except for black scaling opposite vein endings and near posterior angle. Hind wings gray; discal dash present; complete black extradiscal line variable in course, from smoothly rounded to biconcave; outer portion of wing grayish white, with grayish black s. t. line; terminal line and fringe similar to those of forewings.

UNDER SURFACE OF WINGS: Forewings dark gray as far as narrow t. p. line, with outer portion paler gray; hind wings paler gray, heavily covered with grayish black scales, with elongate discal dash and extradiscal line;

terminal line narrow, dark gray, present on all wings; fringe concolorous with wings except for black scales opposite vein endings.

LENGTH OF FOREWING: 12 to 13 mm.; holotype, 12 mm.

FEMALE: Similar to male; antennae shortly pectinate, with longest pectinations 0.15 mm. in length.

LENGTH OF FOREWING: 13 mm. (allotype).

MALE GENITALIA: Uncus elongate, 1.5 mm. in length, somewhat tapering to rounded apex; socius small; gnathos large, broad, flatly V-shaped, with short median area having three small spines; valves short, simple, with apex broadly rounded; anellus ovoid, small, with anterior median incision, posteriorly with sides sclerotized only; paired structures of anellus extending only to base of costa, lobate, laterally flattened, covered with numerous, posteriorly directed, short, thick spines; aedeagus 2.2 mm. in length, slender, straight, with rounded, sclerotized posterior end; vesica with single row of six spines of increasing length. Abdomen without row of setae on segment A_3 .

FEMALE GENITALIA: Sterigma with weakly sclerotized, very narrow strip representing lamella antevaginalis; ductus bursae very large, triangular, with posterior end 0.9 mm. wide, anterior end becoming more sharply tapered and with small lateral sclerotized plates; ductus seminalis arising on right side of corpus bursae near junction with ductus bursae; corpus bursae membranous, with longitudinally striate posterior section joining very large, elliptical anterior portion one-fifth of distance from posterior end; signum very small, about 0.5 mm. in diameter, situated ventrally on right side near junction with posterior section; apophyses posteriores 1.1 mm. in length.

TYPES: Holotype, male, and allotype, female, Lotena-Granito, elevation 800 meters, Neuquén Province, Argentina, October 13, 1971 (M. Gentili). The genitalia of the holotype are mounted on slide FHR 16981, and of the allotype on 16923. Paratypes: same data as types, four males.

REMARKS: Six specimens (five males and one female) and two genitalic dissections have been examined. This species is easily recognized from its long scaled terminal segment of the palpus, the raised, swollen, and tightly scaled front, the pattern of the wings, the paired structures of the anellus, and by the unique female genitalia. The male genitalia appear closest to *penai* Rindge, and so the present species is placed in group IV.

ETYMOLOGY: This species is named for Ing. Mario Gentili, who collected the type series.

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